

REMARKS/ARGUMENTS

This application has been carefully considered in light of the second Non-final Office Action mailed September 5, 2003. As a result of the Office Action, amendment is being made to claims 1 and 15 in order to further distinguish the present invention with respect to the prior art.

Claims 1 and 15 have been rejected under 35 U.S. C. 112, second paragraph, as being indefinite. In this respect, these claims have been amended to remove the indefiniteness. Therefore, withdrawal of this grounds for rejection is respectfully requested.

Claims 1, 2, 8, 12 and 15 have been rejected under 35 U.S.C. 102(b) as being directly anticipated by Hurrell, II, US patent 5,491,893. Claims 3, 4 and 6 have been rejected under 35 U.S.C.103(a) as being obvious, and therefore unpatentable, over Hurrell, II, when further considered in view of the teachings of Ducrue, EP 288334. Claims 5, 12, 13, 14 and 19 have been rejected under 35 U.S.C. 103(a) as being obvious, and therefore unpatentable, over the primary reference to Hurrell, II, when further considered in view of the teachings of the secondary reference to Claesson US patent 3,586,405.

Claims 16 and 17 have been rejected under 35 U.S.C. 103(a) as being obvious, and therefore unpatentable, over Hurrell, II,

when further considered in view of the secondary reference to, Albrecht et al., US patent 5,768,060. Claim 18 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Hurrell, II, in view of Albrecht et al., when further considered in view of the teachings of Claesson.

The Examiner has indicated that the subject matter of claim 7 is directed to allowable subject matter and would be allowed if amended in independent form to include the limitations of the base claim and any intervening claims.

The present invention is directed to a ball bearing and a ball bearing cage wherein the cage defines first and second oppositely oriented recesses each of which is of a configuration to cooperatively receive a single ball therein such as the balls are oriented in a single annular row. As the ring of the present invention is obtained by casting and machining, the ring forms a very balanced structure in light of the single row alignment of the balls received in the ball bearing cage when the bearing cage is mounted between inner and outer bearing rings.

Claims 1 and 15 have been further amended to define the annular single row alignment of the balls which are individually mounted in each of the recesses opening on opposite sides of the annular ring member forming the cage.

In the cited reference to Hurrell, II, the assembly is

directed to a two roll ball bearing structure. The cage member 26 is shown as having oppositely oriented recesses wherein the recesses are designed, as shown at 30, to receive two balls so as to define two rows of balls within the bearing assembly. Thus, the bearing assembly disclosed cannot anticipate the structure of the present invention because the present invention specifically is designed to provide first recesses extending on one side of the cage for cooperatively receiving a single ball therein and second recesses on the opposite side for cooperatively receiving a single ball therein and wherein the balls are retained so as to be aligned in a single annular row.

In view of the foregoing, reconsideration of the grounds for rejection under both 35 U.S.C. 102 and 35 U.S.C. 103 is respectfully solicited. The reference to Hurrell, II, does not anticipate applicants structure as claimed and further, it is not believed that the reference provides the necessary nexus in operative structure to applicants' invention in order to provide the basis for a combination rejection for obviousness.

However, concerning the citation of the secondary reference for purposes of creating a combination rejection for obviousness, the secondary reference to Ducrue is not believed to be obviously combinable with respect to the reference to Hurrell, II. The reference to Ducrue discloses a flexible band of synthetic

material for forming a bearing cage. Further, if a double row bearing similar to the structure shown in Hurrell, II, is to be used, two separate cages are required utilizing the structure disclosed in the reference to Ducrue. Therefore, it is respectfully submitted that one of ordinary skill in the art would not look to modify the structure of the reference to Hurrell, II, to incorporate the flexible material of Ducrue because the basic structure of Ducrue is not directed to a double row bearing as is required in Hurrell, II. Further, Hurrell, II, requires a very rugged bearing and not a flexible band material as disclosed in Ducrue.

Concerning the reference to Claesson, the bearing cages disclosed in the reference do not provide openings in the bottom of the recesses in which the balls are supported, such as is the case with the present invention. Rather, openings are provided to provide a snap connecting feature for the male elements shown at 18 for assembling the bearing cage about the balls. Thus, there is no teaching nor suggestion for providing an opening at the bottom portion of the recesses as is taught by the present invention for purposes of allowing insertion of a tool to facilitate ball replacement.

Concerning the rejection of claims 16 and 17, again, it is respectfully submitted that the primary reference to Hurrell, II,

does not provide a sufficient nexus to the present invention to support a combination rejection. Further, it is not believed that one of ordinary skill in the art would look to modify the structure in Hurrell, II, in order to provide features disclosed in the secondary reference to Albrecht. This is particularly true because of the specific method in which balls are loaded in the bearing of the Hurrell, II reference. The Examiners attention is directed to Figure 6A of the Hurrell, II reference wherein it is noted that the outer bearing ring must be tilted in order to allow the second ball row to be inserted as is shown in the drawing figures. Also, the reference to Albrecht, et al., discloses a low profile radial pre-loaded ball bearing having a single ball row and not a double ball row as is disclosed in Hurrell, II.

In view of the foregoing, it is respectfully submitted that claims 1 through 19, which are currently of record, are clearly distinguishable with respect to the prior art. Particularly, neither claims 1 nor 15, which are the two independent claims, are believed anticipated by the primary reference to Hurrell, II, for the reasons discussed above. Further, it is not believed that these claims nor any of the depending claims are made obvious by a combination of elements taken from the remaining prior art as there is no incentive to make the combination

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suggested in the references themselves, especially as they would relate to the modification of Hurrell, II, structure.

An earnest effort has been made to place this application in condition for allowance which action is respectfully solicited. Should the Examiner have any questions concerning the amendments submitted herewith or the allowability of the claims with respect to the prior art, it would be appreciated if the Examiner would call the undersigned attorney of record at the telephone number shown below for purposes of scheduling a personal interview before taking any action which may be considered final.

Respectfully submitted,

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